

WHAT IS CLAIMED IS:

1. A thermal overload relay comprising:

an actuating mechanism for generating power when an abnormal state is occurred in a circuit between a power source and an electrical load;

a switching mechanism for switching contacts on state or off state according to the power transferred from the actuating mechanism; and

a case for receiving the actuating mechanism and the switching mechanism;

wherein the actuating mechanism including:

a plurality of main bimetals arranged in parallel to the bottom surface of the case for being bended when the abnormal state is occurred;

a plurality of heating member, each of the heating member is wound around the corresponding main bimetal for transferring heat occurred due to the abnormal state to the main bimetal;

a shifter positioned to be contacted one ends of the main bimetals in parallel to the bottom surface of the case for being horizontally movable by the bending force of the main bimetals; and

a lever connected to the shifter for transferring the movement force from the shifter to the switching mechanism.

2. The thermal overload relay according to claim 1,
wherein the shifter comprising an upper shifter and lower
shifter so that they are positioned on a vertical plane,
each shifter is arranged in substantially perpendicular to
5 the one end of the main bimetal, and in parallel to the
bottom surface of the case.

3. The thermal overload relay according to claim 1,
wherein the shifter comprising an upper shifter and lower
shifter so that they are positioned on a vertical plane,
10 each shifter is arranged in substantially perpendicular to
the one end of the main bimetal, and in parallel to the
bottom surface of the case, and the shifter further
comprising a pair of shaft for connecting the lever to the
upper shifter and the lower shifter respectively, so as to
15 transfer the displacement amount generated by the bending
force of the main bimetal to the switching mechanism.